1. (Currently Amended) A method of separating and/or enriching prokaryotic DNA in vitro, comprising the steps of:

a. contacting at least one prokaryotic DNA, present in solution, with a protein which specifically binds prokaryotic DNA and has 25% to 35% homology with the wild type CGBP protein, thereby forming a protein-DNA complex, and

b. separating said complex.

2. (Original) The method according to claim 1, wherein the protein comprises the amino acid sequence of SEQ-ID No. 2.

3. (Previously Presented) The method according to claim 1, wherein the protein is capable of recognizing non-methylated CpG motifs.

4. (Previously Presented) The method according to claim 1, wherein separation is followed by a step for separating the DNA from the protein of the complex.

5. (Previously Presented) The method according to claim 1, wherein the protein is bound to a carrier.

6. (Original) The method according to claim 5, wherein the protein is bound directly to the carrier.

7. (Original) The method according to claim 5, wherein the protein is bound to the carrier via an antibody directed against it.

8. (Original) The method according to claim 5, wherein the protein is bound to the carrier via a spacer.

9. (Original) The method according to claim 8, wherein a diamino hexane residue is used as the spacer.

10. (Previously Presented) The method according to claim 5, wherein the carrier is provided as a matrix, as microparticles or as a membrane.

11. (Original) The method according to claim 10, wherein sepharose is used as the matrix.

12. (Previously Presented) The method according to claim 1, wherein separation is effected by means of an antibody or antiserum directed against the protein.

13. (Previously Presented) The method according to claim 1, wherein separation is effected by means of electrophoresis.

14. (Previously Presented) The method according to claim 6, wherein the protein is an antibody or a corresponding antiserum directed against non-methylated CpG motifs.

15. (Previously Presented) The method according to claim 1, wherein the solution contains a mixture of eukaryotic and prokaryotic DNA.

16. (Original) The method according to claim 15, wherein the prokaryotic DNA is bacterial DNA.

17. (Previously Presented) The method according to claim 15, wherein the solution is a body fluid or is derived therefrom.

18. (Previously Presented) The method according to claim 15, wherein separation is achieved by means of a filter which filters the corresponding DNA-protein complexes.

19. (Original) The method according to claim 18, wherein the protein is immobilized to a filter matrix.

20. (Cancelled)

21. (Previously Presented) The method according to claim 1, wherein after step b) the prokaryotic DNA is amplified in a step c).

22. (Previously Presented) The method according to claim 21, further comprising the steps of:

a) isolating the prokaryotic DNA from the protein-DNA complex,

b) denaturating the double-stranded DNA,

c) hybridising the individual strands of the DNA with complementary primers,

d) generating double-strand fragments via reaction with polymerases and

e) repeating these steps up to the desired degree of amplification.

23. (Previously Presented) The method according to claim 22, further comprising the steps of:

a) cloning the isolated prokaryotic DNA sequences into vectors,

b) transforming suitable host cells with these vectors,

c) cultivating these transformed cells,

d) isolating the vectors from these cells and

e) isolating the DNA.

24-25. (Cancelled)

26. (Previously Presented) The method according to claim 17, wherein the body fluid is full blood, serum, plasma, cell preparations from full blood, urine, liquor, pleural liquid, pericardial liquid, peritoneal liquid, synovial liquid or bronchoalveolar lavage.

27. (Currently Amended) A method of separating and/or enriching non-methylated DNA from a mixture of non-methylated and methylated DNA in vitro, comprising:

providing a mixture containing at least one non-methylated DNA and at least one methylated DNA;

contacting said mixture in a solution with a protein having between about 25% and 35% homology with a wild type CGBP protein to specifically bind said protein and said at least one non-methylated DNA, thereby forming a protein-DNA complex; and

separating said complex;

wherein said protein does not specifically bind to said at least one methylated DNA.

28. (Previously Presented) The method according to claim 27, wherein said method includes a diagnosis of diseases having a specific methylation pattern.

29. (Previously Presented) The method of claim 28, wherein said specific methylation pattern indicates the presence of cancer.